NOTE XVIII.

REVISION OF THE GENERA *MACROGLOSSUS* AND *SYCONYCTERIS* AND DESCRIPTION OF A NEW GENUS AND SPECIES, *ODONTONYCTERIS MEIJERI*

BY

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The small frugivorous Bats formerly headed under the specific title of *Macroglossus minimus* have been split into two subgenera and seven species by Mr. Matschie (Die Fledermäuse des Berliner Museums für Naturkunde, 1. Lieferung, 1899). These subgenera are *Macroglossus* and *Syconycteris*, distinguished the one from the other under more by a character so typically pronounced, that I think this alone may suffice to make them worthy of generic rank. I mean *the incisors*, so minute in *Macroglossus*, meanwhile they are so well developed in *Syconycteris*; the difference in size is so great, that even palaeontologists might tell you without any hesitation whether a given fossil jaw with incisors belonged once to a species of the one or of the other genus.

Another radical character is that in *Macroglossus* the wing-membrane is attached *to the base of the fourth toe*, in *Syconycteris* however *to the base of the fifth toe*. Mr. Matschie had but few specimens to his disposal therefore

were left open several unsettled questions, so I think a revision may perhaps throw more light on the understanding of this most difficult group of Bats.

In our collection there are specimens from the following localities: Java, East-Sumatra, Borneo, Celebes, Amboina, the Aru-islands and New Britain, therefore some localities not or badly represented in other collections; my study-material practically has been greatly enriched by the extreme kindness of Hofrath Dr. A. B. Meyer, who placed in my hands all the *Macroglossus*-specimens of the Dresden-Museum, whereby I can add to the above named localities the following: West-Sumatra, North-Celebes, New Guinea (Andai), Murray-islands and Aru-islands, besides a new genus with a new species from the Sangi-islands. I here successively describe the specimens after their localities.

Java. 6 stuffed specimens, 4 in spirits, 2 skeletons and 2 skulls (L. M.).

	skins			alcoh.			
Measures in millimeters:	♂	♀	♀ [1]	♀	♀ [2]	♀	♂
Distance between eye and upperlip.	15	15	12	14	15	15	15
forearm	44	45	42	44	42	44	44
second finger	34	34	29	31	32	34	33
third finger	86	86	84	81	82	87	86
fourth finger	70	69	65	67	67	71	71
fifth finger	66	64	61	64	64	65	65

Rhinarium small, grooved between the not prominent nostrils, border of upperlip with three very minute impressions, lowerlip slightly grooved; at the base of the outer margin of the ear a flat rounded off lobe. Upper incisors in pairs, very small, outer ones somewhat longer than inner ones; upper premolars with anterior cusp, distant from canine, not crowded, upper molars low and flat, closer set; lower incisors minute, in pairs, outer ones somewhat

1) with suckling young. 2) in bearing.

longer, first lower premolar close to canine, other ones distant, second lower premolar nearly equal in size with the anterior one, strongly cusped; third much flatter and more equalling the narrow crowned molars in size and shape. Bony palate strongly extended posteriorly. Palate-ridges seven in number, the anterior six regularly arched, equidistant, the posterior one has a triangular form and is separated from the other ones by a rather wide interval. Wing-membrane from the base of the fourth toe.

The specimens from Java belong all to the same species, the first described and longest known, viz: *Macroglossus minimus* Geoffroy.

Sumatra. 2 stuffed specimens, 2 in spirits and 1 skeleton (L. M.); 1 stuffed specimen and 1 in alcohol (Dr. M.).

	skins		alcoh.	
Measures in millimeters:		♂	♂	♀
Distance between eye and upperlip .	14	13	13	13
forearm.	44	44	43	44
second finger	34	32	32	34
third finger	86	83	78	88
fourth finger.	72	68	64	72
fifth finger.	69	64	62	69

Rhinarium small, the groove between the feebly prominent nostrils passing down to the border of the upperlip, although not making a deep impression on the latter, there are two more slight impressions on the border of the upperlip; lowerlip divided by a rather deep groove into two cushions; at the base of the outer margin of the ear a slightly triangular lobule. Upper incisors in pairs, very small, set at intervals somewhat wider apart than in the Java-species, the outer ones a trifle larger, upper premolars more triangular than in the Java-species, the anterior rather close to the canine, the second at equal distances from first and third, posterior upper molar much smaller

than anterior one; lower incisors in a triangle set in pairs, outer ones somewhat stouter than inner ones; first lower premolar close to canine, somewhat smaller than the second, which is implanted closer to the third than to the first one, first lower molar similar to a small premolar somewhat wider apart from the true molars than the latter are set the one from the other. Bony palate as strongly extended posteriorly as in the Java-species. Palate-ridges seven in number, the six anterior ones equidistant, arched; the seventh at much greater distance presents anteriorly an undulated aspect. The wing-membrane from the base of the fourth toe. The above described specimens belong most likely to *Macroglossus lagochilus* Matschie.

Borneo. 1 specimen (♂ ad. [1])) in alcohol (L. M.).

Measures in millimeters:

Distance between eye and upperlip	13
forearm	42
second finger	32
third finger	81
fourth finger	66
fifth finger	62

Rhinarium, nostrils, grooves, teeth and palate-ridges a. s. o. do not practically differ from the descriptions of the same parts of the Sumatra-species given above; the only difference perhaps being that between the sixth and seventh palate-ridge there are two rather strongly pronounced cushions placed close to the sixth palate-ridge; this however may be merely individual — I have only a single specimen at my disposal. The wing-membrane is attached to the base of the fourth toe. So that I believe the Borneo-specimen belonging to the same species as our Sumatra-individuals, that is to *Macroglossus lagochilus* Matschie.

1) By a slip of the pen registered as ♀ (N. L. M. 1897, p. 51).

Celebes. 2 stuffed specimens (L. M.); 4 stuffed specimens and 2 specimens in alcohol (Dr. M.).

	alc.		skins	
Measures in millimeters:	♀	♀	♂	♀
Distance between eye and upperlip .	11	11	10	15
forearm.	40	40	39	44
second finger	28	28	27	32
third finger	74	77	73	84
fourth finger.	58	60	58	67
fifth finger.	54	57	53	66

The large female-specimen (Leyden Museum), has been received from Mr. von Faber's collections as having been collected at Menado, North-Celebes. As far as can made out from a dried skin it seems to be a *Macroglossus lagochilus*. The Dresden-Museum-specimens like the Leyden dried ♂-skin are *Macroglossus nanus* specimens. It however must be remarked that there are differences in the form of the seventh palate-ridge in the alcoholic females from the Dresden-Museum; in the one (B. 3797) that palate-ridge is a well pronounced triangle, meanwhile in the other (B. 3798) it presents the form of a straight line with wanting extremities.

Amboina. 3 stuffed specimens and 1 skull (L. M.)

Measures in millimeters:	♂	♂	♀
Distance between eye and upperlip	13	13	11
forearm	45	46	46
second finger	33	32	32
third finger	84	85	86
fourth finger	69	65	67
fifth finger	66	66	63

Rhinarium, as far as can be studied in dried specimens, well developed, nostrils more prominent and much more tubular therefore than in the other species, groove between nostrils deep, passing down to the border of the upperlip; well represented and deeply pronounced are the two side grooves, so that the anterior part of the upperlip is

as it were bilobate. Lower lip divided by a deep groove into two cushions. Triangular lobe at the base of the outer margin of the ear. Upper-incisors very strongly developed, not in pairs, middle ones close together very projecting; of about the same size are the projecting outer ones, placed much closer to the middle ones than to the canines; lower incisors crowded between the canines, strongly developed, outer ones nearly double the size of the inner ones, the latter bifid on the anterior margin; like the upper incisors so the lower ones are projecting. All premolars and molars equidistant, solely the anterior premolar rather close to the canine, they are much stronger build than in the other species, flattening gradatim backward. The lower jaw is very strong compared with that bony part in the other species, the coronoid process is much more elongated and sloping backward. Bony palate like in the other species. Palate-ridges indistinct as the animals being dried skins. Wing-membrane from the base of the fifth toe. The bats here described apparently are specimens of the species of the genus *Syconycteris*, described by Matschie as *Syconycteris papuana*.

Aru-islands. 3 specimens in alcohol (L. M.); 2 specimens in alcohol (Dr. M.).

	Dr. M.		L. M.		
Measures in millimeters:	♂	♀	♂	♂	♀
Distance between eye and upperlip	11	10	11	10	11
forearm	39	36	39	39	41
second finger	30	26	30	30	29
third finger	71	66	75	77	76
fourth finger	58	53	58	62	62
fifth finger	53	50	55	57	58

The two specimens from the Dresden Museum as well as the first measured ♂ from the Leyden Museum belong to the *Macroglossus*-genus, meanwhile the other ♂ and ♀ specimens from the Leyden Museum, as their dentition show are certainly *Syconycteris*-specimens. Our three speci-

mens have been collected by von Rosenberg in the Aru-islands (Wokam), in the Berlin Museum there are a *Macroglossus-* ♂ and a *Syconycteris-*♂ from the same island, Wokam, and also from v. Rosenberg's collections. The Dresden-specimens and a male from the Leyden Museum I bring under the heading *Macroglossus nanus*, the somewhat larger ♂ and ♀ from the Leyden-collection are *Syconycteris papuana*-specimens. Accordingly to Matchie there is a difference in the seventh palate-ridge between his Wokam-♂ and the the specimens from New Guinea viz: the seventh »verläuft fast geradlinig nur ganz schwach nach vorn gebogen und ist in der Mitte nicht stumpfwinklig geknickt". As there nearly always are individual variations we should not attach too great importance to such small differences; in our ♂ the seventh palate-ridge is much more triangularly shaped than in our ♀, and there are even small differences in the length of muzzle, fore-arm, second and third finger, but they are all of subordinate importance. There are no two animals exactly alike in- and outside as little as two leaves of a given tree are alike in all minute details. In size the Aru-specimens of *Syconycteris* are much smaller than the New Guinea-specimens (from the Dresden- and Berlin Museum) in all their dimensions, besides other small differences, f. i. the lobule at the base of the outer margin of the ear is very minute and rounded off, the grooves in the upperlip vary a little, a. s. o.; the material however at present at hand is too small to loose here the specific question; we want fresh specimens.

New Guinea. 2 specimens in alcohol (Dr. M.).

Measures in millimeters:	1447 ♂	1446 ♂
Distance between eye and upperlip . .	11	12
forearm	42	38
second finger	30	29
third finger	84	76
fourth finger	66	62
fifth finger	60	58

As they belong to two different genera (1447 is a *Syconycteris*, 1446 a *Macroglossus*) I will describe them separately.

N°. 1447. Rhinarium broad; rather deep groove between the prominent nostrils running down to the border of the upperlip; on both sides another deep groove, dividing the upperlip like in the Amboina-specimens as it were into two lobes; lowerlip also deeply grooved in the middle. Triangular lobe at the base of the outer margin of the ear. Dentition exactly alike the above described of the Amboina-specimens. Of the seven palate-ridges are the anterior six of the same semi-circular shape and equidistant, the seventh however is much more distant and less curved; the latter is placed about midway between the sixth palate-ridge and the on its anterior border serrate smooth-palate. Wing-membrane from the base of the fifth toe. I don't hesitate in calling this animal *Syconycteris papuana* Matschie. It is from Andai, the locality of Matschie's type-specimen.

N°. 1446. Rhinarium, grooves on the upper- and lowerlip, dentition, ear lobule and attachment of wing-membrane agree so exactly with the same parts of the Murray-island-specimen, that I bring it like that specimen to *Macroglossus nanus* Matschie. Notwithstanding in this specimen the sixth palate-ridge is normally represented and the seventh at some distance of the sixth and somewhat concave in the middle anteriorly. I think the material is too small to judge at present in how far such minute differences are of more than individual signification. In the measurements there are slight differences too, but we should bear in mind that N°. 1446 is a male meanwhile the Murray-island-specimen is a female.

Murray-islands. 2 specimens in alcohol (Dr. M.).

Measures in millimeters:	1625 ♀
Distance between eye and upperlip	10
forearm	38
second finger	27
third finger	70
fourth finger	57
fifth finger	52

Both specimens — an adult female and a very young male — are in such a deplorable condition that all hairs of head and body are gone. I describe the adult female: rhinarium small, devided in the middle by a groove between the feebly pronounced nostrils, which passes down to the border of the upperlip, on both sides a nearly imperceptible indication of a groove on the border of the upperlip; lowerlip very feebly grooved, not on its border as I should say. Ear with a slightly rounded off very minute lobule on the base of its outer margin. Dentition as weakly developed as in the Java-species, the teeth arranged like in that species. The five first palate-ridges in parallel curved rows, the anterior one more distant from the second, the other four equidistant, the sixth slightly indicated by two sideward cushions, the seventh is triangular in shape. Wing-membrane from the base of the fourth toe. The specimens apparently belong to Matschie's *Macroglossus nanus*.

New Britain. 1 specimen in alcohol (L. M.).

Measures in millimeters:	♀
Distance between eye and upperlip	11
forearm	37
second finger	28
third finger	71
fourth finger	58
fifth finger	54

Rhinarium small, a deep groove between the not very prominent nostrils, passing down to the border of the upperlip, side grooves well developed down to the same border, lowerlip divided by a groove into two cushions. The lobule on the base of the outer margin of the ear is solely represented by a minute vaulting — it would be overlooked if not present in the other species of the genus. Dentition practically not differing from that of the other *Macroglossus*-species and like in the other species of that genus the wing-membrane is attached to the base of the fourth toe. The anterior palate-ridge at somewhat greater distance from the second than the latter from the following, second to third of about the same semi-circular curving, equidistant, the sixth in the middle anteriorly more triangular, the seventh sidewardly incomplete, anteriorly obtusely triangular. This specimen agrees in about all characters with the specimens of the species *Macroglossus nanus* Matschie, so that I think it need not a new name.

Conclusions. Java has his own species. *Macroglossus minimus*; Sumatra, Borneo and perhaps Celebes are the habitat of *Macroglossus lagochilus*, meanwhile in Celebes, Aru-islands, New Guinea, Murray-islands and New Britain we find *Macroglossus nanus*. *Syconycteris papuana* is represented in Amboina, Aru-islands and New Guinea. For more localities and other species see Matschie's »Fledermäuse des Berliner Museums für Naturkunde", 1899, 1. Lieferung.

Odontonycteris Meyeri, n. g. n. sp.

Sangi-islands. 1 stuffed specimen with its skull (Dr. M.).

Measures in millimeters:	♂.
Distance between eye and upperlip	12
forearm	39
second finger	29
third finger	78
fourth finger	63
fifth finger	56

This specimen, although externally — as far as can be judged after a dried skin — so alike to a *Macroglossus*-species, belongs indeed to a quite different genus, as it has 2 molars (*on each side an upper molar*) more than any of the other hitherto described members of the Macroglossine-group! It is a great pity that there is no alcoholic specimen known from this form, so that the description will remain incomplete, however the above named character is so radical, that I am induced to regard upon it as the type of a new genus and a new species, with the dental formula: I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{3}{3}$, M. $\frac{3}{3} = 36$; the other genera are:

Macroglossus, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{2}{3}$, M. $\frac{3}{3} = 34$,
Syconycteris, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{3}{3}$, M. $\frac{2}{3} = 34$,
Eonycteris, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{2}{3}$, M. $\frac{3}{3} = 34$,
Melonycteris, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{3}{3}$, M. $\frac{2}{3} = 34$,
Megaloglossus, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{3}{3}$, M. $\frac{2}{3} = 34$,
Callinycteris, I. $\frac{2}{2}$, C. $\frac{1}{1}$, P. $\frac{2}{2}$, M. $\frac{3}{3} = 32$,
Nesonycteris, I. $\frac{2}{1}$, C. $\frac{1}{1}$, P. $\frac{3}{3}$, M. $\frac{2}{3} = 32$,
Notopteris, I. $\frac{2}{1}$, C. $\frac{1}{1}$, P. $\frac{2}{3}$, M. $\frac{2}{2} = 28$.

I call the genus *Odontonycteris* and the species *Meyeri*, in honour of my friend Dr. A. B. Meyer, who brought the specimen home from his scientific expedition to Tabukan, Great Sangi, in 1871.

Keeping in view the great variation in colour of the members of the Macroglossine-group, I think it better to enter not in details of the description of the colour of this species; however I should say that the upperparts are of a reddish brown, redder shading towards the sides of body and the extremities; underparts with much shorter hairs and of a whitish colour slightly tinged with roseate brown, browner towards the extremities. Wing-membrane from the base of the fourth toe like in the true *Macroglossus*-species.

Upperjaw. Incisors small, distant, the middle ones somewhat wider apart than they are from the outer ones, the latter separated from the canines by a still larger interval;

the middle ones have broader crowns but are of a smaller size than the outer ones. Anterior premolar at a little distance from the canine, second premolar exactly between the two other ones, third premolar close to the anterior molar which forms with the other two molars a crowded series; first and second premolar of nearly the same size and shape, slightly slanting forewards; posterior premolars and the three molars about equal in size and shape, with narrow horizontal crowns.

Lower jaw. Incisors very small, in pairs, on each side the second just between the anterior one and the canine; between the pairs a rather large interval. Anterior premolar very closely to the canine, the second much nearer to the third than to the anterior one; the interval between the third premolar and the anterior molar is a little larger than the small intervals between the three molars mutually; first and third premolar of about the same size and shape, although the latter is slightly slanting forewards; the second premolar stouter developed, broader and higher, with a large anterior cusp; the three molars of equal size remember strongly the uppermolars.